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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,008	02/19/2002	Hidefumi Yoshida	2803.66230	6667

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EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/079,008	Applicant(s) YOSHIDA ET AL.	
	Examiner Kenneth A Parker	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: The relationship between the scattering film and the rest of the system, and claim 11 has no relation between the added components and the rest of the system.

Claims 10-11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Scattering is a property without a single direction, as light is sent in more than one direction by the basic definition of scattering. Therefore what applicant means is unclear. The examiner believes that the light scattering is meant to be either anisotropic, or having a preferred direction, and the application has been examined accordingly.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clerc4701028.

The Clerc reference shows claim 1 including a liquid crystal cell comprising a pair of substrates 19-20 and a liquid crystal layer 18 arranged between the pair of substrates; first and second polarizers 21-22 arranged on either side of the liquid crystal cell; a first retardation plate 24 arranged between the liquid crystal cell and the first polarizer and a second retardation plate arranged between the liquid crystal cell and the second polarizer 23; each of the first and second retardation plates having an optical axis in a plane parallel to the surfaces of the substrates and a retardation of substantially $\frac{1}{4}$ (see column 6, lines 44-55 which indicate a retardation of 150nm, which is in the range applicant lists as corresponding to substantially $\frac{1}{4}$ wave and is exactly a

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quarter wave for 600 nm which is in the visible spectrum), the optical axis of the first retardation plate being perpendicular to the optical axis of the second retardation plate (see cover figure), the first and second polarizers having polarizing axes arranged at an angle of 45 with respect to the optical axes of the first and second retardation plates (also see figure) . The language "the liquid crystal cell being arranged such that a state of alignment of the liquid crystal molecules changes, accompanying change in a polar angle and/or change in an azimuth upon application of voltage" is not understood, and in view of the rejection under 112 is believed to simply mean that the liquid crystal changes azimuth or angle, which any liquid crystal would have to do change states. As homeotropic cells change angle to the plate and possibly twist a bit, this language is met as best understood. " is not understood, and in view of the rejection under 112 is believed to simply mean that the liquid crystal changes azimuth or angle, which any liquid crystal would have to do change states. As homeotropic cells change angle to the plate and possibly twist a bit, this language is met as best understood.

The Clerc reference shows Claim 2 including a liquid crystal cell comprising a pair of substrates and a liquid crystal layer arranged between the pair of substrates; first and second polarizers arranged on either side of the liquid crystal cell; a first retardation plate arranged between the liquid crystal cell and the first polarizer; a second retardation plate arranged between the liquid crystal cell and the second polarizer; each of the first and second retardation plates having an optical axis in a plane parallel to the surfaces of the substrates and a retardation of substantially $\lambda/4$, the optical axis of the first retardation plate being perpendicular to the optical

axis of the second retardation plate; the first and second polarizers having polarizing axes arranged at an angle of 45 with respect to the optical axes of the first and second retardation plates (these features are identified in the reference above).

The language “ and the liquid crystal cell being arranged such that an azimuth distribution exists in a state of alignment of the liquid crystal molecules when the liquid crystal molecules are aligned horizontally or obliquely with respect to the surfaces of the substrates” is also not understood, and in view of the rejection under 112 is believed to simply mean that the liquid crystal has different tilts on both sides of the slit. As the slits function is to create an opposite tilt on either side, this language is met as best understood.

Claim 3, a liquid crystal display device according to claim 1 or 2, wherein at least a portion of the liquid crystal molecules are aligned in the azimuth except for 45 from the polarizing axes of the polarizers. Claim 4, a liquid crystal display device according to claim 1 or 2, wherein the liquid crystal of the liquid crystal cell is of a vertical alignment type, the liquid crystal cell includes a structure or a slit arranged on the electrode of at least one of the substrates, and a state of alignment of the liquid crystal molecules located on one side of the structure or the slit is different from a state of alignment of the liquid crystal molecules located on the other side of the structure or slit. Claim 5 including the device according to claim 4, wherein liquid crystal molecules located on the structure or slit are aligned, accompanying a change in the azimuth upon application of voltage. Claim 6 including a liquid crystal cell comprising a pair of substrates and a liquid crystal layer arranged between the pair of substrates; first and second polarizers

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arranged on either side of the liquid crystal cell; a first retardation plate arranged between the liquid crystal cell and the first polarizer; a second retardation plate arranged between the liquid crystal cell and the second polarizer; each of the first and second retardation plates having an optical axis in a plane parallel to the surfaces of the substrates and a retardation of substantially $1/4$, the optical axis of the first retardation plate being perpendicular to the optical axis of the second retardation plate; the first and second polarizers having polarizing axes arranged at an angle of 45° with respect to the optical axes of the first and second retardation plates (these features are identified in the reference above), the liquid crystal of the liquid crystal cell being of a vertical alignment type, the liquid crystal cell including structures or slits arranged on or in an electrode of at least one of the substrates, a state of alignment of the liquid crystal molecules located on one side of the structure or the slit being different from a state of alignment of the liquid crystal molecules located on the other side of the structure or the slit; and **at least one of the pair of substrates having electrically conductive linear structures**. Electrodes are conductive linear structures, so this language is met by the reference.

Therefore also shown is claim 7 including a liquid crystal cell comprising a pair of substrates and a liquid crystal layer arranged between the pair of substrates; first and second polarizers arranged on either side of the liquid crystal cell; a first retardation plate arranged between the liquid crystal cell and the first polarizer; a second retardation plate arranged between the liquid crystal cell and the second polarizer; each of the first and second retardation plates having an optical axis in a plane parallel to the

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surfaces of the substrates and a retardation of substantially $1/4$, the optical axis of the first retardation plate being perpendicular to the optical axis of the second retardation plate; the first and second polarizers having polarizing axes arranged at an angle of 45° with respect to the optical axes of the first and second retardation plates (these features are identified in the reference above); the liquid crystal of the liquid crystal cell being of a vertical alignment type, the liquid crystal cell including structures or slits arranged on or in an electrode of at least one of the substrates, a state of alignment of the liquid crystal molecules located on one side of the structure or the slit being different from a state of alignment of the liquid crystal molecules located on the other side of the structure or the slit; and a retardation in the plane of the retardation plate being not less than 120 nm and not more than 160 nm.

Therefore also shown is claim 8 including the device according to claim 7, wherein an angle between the absorbing axis of the polarizer and the aligning direction or the inclining direction of liquid crystal molecules is not less than 50° , and the contrast characteristic is symmetrical with respect to the horizontal direction (the characteristics are symmetrical with respect to the horizontal direction, as the structure is the same as applicants).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 9 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Clerc 4701028 as applied above, and further in view of Harris et al 5344916 and Arakawa et al 5189538.

Lacking from the disclosure is the negative birefringent compensator. Such compensators were well known for improving viewing angle by compensating for the change in birefringence at off axis directions. Both references disclose such compensators, evidencing the well known status. Therefore it would have been obvious to one of ordinary skill, in the device of Clerc, to employ a negative birefringent film (or films) to compensate for the change in birefringence in off axis directions.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noritake et al 6686981 in view of Mitsui et al 6166791 and Hayashi et al 6166793.

Noritake et al discloses the features of claim 10 including a liquid crystal cell comprising a pair of substrates and a liquid crystal layer arranged between the pair of substrates; a film causing light to scatter (but not disclosed as being in a specific direction) and the liquid crystal of the liquid crystal cell being of a vertical alignment type, the liquid crystal cell including structures or slits arranged on or in an electrode of at least one of the substrates, a state of alignment of the liquid crystal molecules located on one side of the structure or the slit being different from a state of alignment of the liquid crystal molecules located on the other side of the structure or the slit, and of claim 11, as it discloses a compensator which would be a uniaxial stretched film or a biaxial stretched film and a film having a negative retardation so that the viewing angle characteristic of the liquid crystal display can be improved.

The lacking feature of the diffuser having an anisotropic scattering and a directional preference property was well known for the benefit of reducing glare in reflective devices. This is evidenced by Mitsui and Hayashi et al, both of which disclose such films. Therefore it would have been obvious to one of ordinary skill to employ diffusers with anisotropic or preferential scattering properties for the benefit of reducing glare.

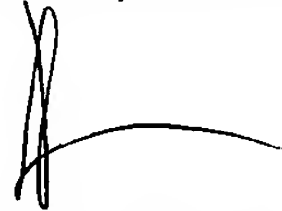
Election/Restrictions

Applicant's election without traverse of group 1 in Paper No. 11132003 is acknowledged.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 571-272-2298. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

A handwritten signature in black ink, appearing to be 'K. Parker', with a long horizontal flourish extending to the right.

Kenneth A Parker
Primary Examiner
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